

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-7 and 9-15 are presently pending in this application, Claim 8 having been canceled, Claims 1, 3-7, and 9-13 having been amended, and Claims 14 and 15 having been newly added by the present amendment.

In the outstanding Office Action, Claims 1-13 were rejected under 35 U.S.C. §112, second paragraph, for being indefinite; Claim 8 was objected to under 37 CFR 1.75 as being a substantial duplicate of Claim 1; Claims 1-3 and 9 were rejected under 35 U.S.C. §102(b) as being anticipated by Okamoto et al. (U.S. Patent 5,382,092); and Claims 4-7 and 10-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Grylls et al. (U.S. Patent 4,188,407) in view of Okamoto et al.

With regard to the objection of Claim 8 and 35 U.S.C. §112, second paragraph, rejection in the claims, Claim 8 has been canceled, and Claims 1, 3-7, and 9 have been amended to clarify the subject matter recited therein. Thus, Claims 1, 3-7, and 9-13 are believed to be in compliance with the requirements of the statute. Also, the claim amendments to Claims 1, 3-7, and 9-13 are believed to be merely cosmetic and thus are not believed to narrow the scopes of the claims. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually satisfactory claim language.

Newly added Claims 14 and 15 are believed to find clear support in the claims, specification, and drawings as originally filed. For example, Claims 14 and 15 are believed to be supported by Figures 1, 2 and 4 and similar to Claims 1 and 4. Hence, no new matter is believed to be added thereby.

Briefly recapitulating, Claim 1 of the present application is directed to a stirred tank for storing a part of yeast slurry discharged from fermentation tanks where beer is fermented, and then returning the part of yeast slurry to the fermentation tanks for reuse, including a stirring impeller vertically positioned within the stirred tank and so constructed that a maximum diameter of a rotation body defined by the rotation of the stirring impeller is 60-90% of the inner diameter of the stirred tank, and the height of the rotation body is 70% or more of a depth of the part of yeast slurry stored in the stirred tank. By providing such a stirring impeller, the yeast slurry is stirred to flow more effectively even in proximity to the inner wall of the stirred tank, thereby stirring the yeast slurry more uniformly, and the yeast is significantly less likely to be damaged.¹

The outstanding Office Action asserts that Okamoto et al. disclose a stirred tank for storing a part of yeast slurry as recited in Claim 1. However, MPEP states that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently describe, in a single prior art reference,”² and it is respectfully submitted that Okamoto et al. fail to teach “a stirring impeller vertically positioned within the stirred tank and so constructed that *a maximum diameter of a rotation body defined by the rotation of the stirring impeller is 60-90% of the inner diameter of the stirred tank, and the height of the rotation body is 70% or more of depth of the part of yeast slurry stored in the stirred tank*” as recited in Claim 1 (emphasis added in Italic). On the other hand, Okamoto et al. are believed to merely disclose the mixing apparatus where the cylindrical wall 2 has an inner diameter of 400 mm and the helical ribbon blade 6 has a diameter of 380 mm, i.e., the rotation body of the blade

¹ See Specification, page 7, line 20, to page 8, line 8.

² *Verdegaal Bros. v. Union Oil Co. Of California*, 814 F.2d 628, 631, 2USPQ2d 1051, 1053 (Fed. Cir. 1987).

would be about 95 % of the inner diameter,³ and notably, these dimensions for the Okamoto et al. blade do not fall within the dimensions recited in Claim 1. As such, the Okamoto et al. blade is believed to be significantly less effective in fermenting yeast slurry. Therefore, the structure recited in Claim 1 is believed to be patentably distinguishable from Okamoto et al.

Grylls et al. disclose a process for producing dried yeast. Nevertheless, like Okamoto et al., Grylls et al. are not believed to teach "a stirring impeller vertically positioned within the stirred tank and so constructed that *a maximum diameter of a rotation body defined by the rotation of the stirring impeller is 60-90% of the inner diameter of the stirred tank, and the height of the rotation body is 70% or more of depth of the part of yeast slurry stored in the stirred tank*" as recited in Claim 1 (emphasis added in Italic). Thus, the structure recited in Claim 1 is also believed to be distinguishable from Grylls et al.

Because neither Grylls et al. nor Okamoto et al. disclose the structure as recited in Claim 1, even the combined teachings of these cited references are not believed to render the subject matter recited in Claim 1 obvious.

Likewise, Claims 4, 14 and 15 are believed to include subject matter substantially similar to what is recited in Claim 1 to the extent of discussion above. Thus, Claims 4, 14 and 15 are also believed to be distinguishable from both Grylls et al. and Okamoto et al.

Applicants further wish to point out that Claims 14 and 15 recite the stirring impeller including at least one vertically surfaced paddle blade. By providing such a stirring impeller, the stirring impeller is more properly cleaned, thereby more effectively preventing adverse effects such as microbial contaminations.⁴ In addition, the rotation of the stirring impeller including at least one vertically surfaced paddle blade more effectively causes radially outward flow of the yeast slurry inside the tank. Thus, the yeast slurry is stirred more efficiently. In

³ See Okamoto et al., column 8, lines 54-58.

contrast, Okamoto et al. disclose helical ribbon blades which are slanted or curved, not a vertically surfaced paddle blade. As such, the Okamoto et al. blade is believed to have spots that are hard to clean properly during the cleaning operation of the tank, and therefore contaminations may be caused. Further, since the helical ribbon blades move the fluid contents substantially in the vertical directions along the cylindrical wall and along the axial center of the tank,⁵ the fluid contents are stirred less efficiently. Grylls et al. disclose blades designed for drying moist yeast particles, such as blades, rods or bars of simple rectangular or circular cross-section, and blades twisted out of horizontal.⁶ However, these Grylls et al. blades are not a vertically surfaced paddle blade and thus do not provide stirring as efficient as the stirring impeller as recited in Claims 14 and 15. Thus, Claims 14 and 15 are believed to be further distinguishable from Grylls et al. and Okamoto et al.

For the foregoing reasons, Claims 1, 4, 14 and 15 are believed to be allowable. Furthermore, since Claims 2-3, 5-7, and 9-13 depend ultimately from either Claim 1 or 4, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 2-3, 5-7, and 9-13 are believed to be allowable as well.

⁴ See Specification, page 11, lines 22-25.

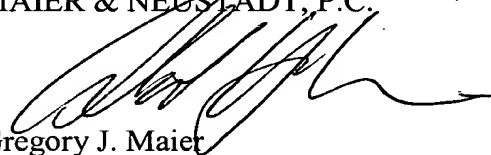
⁵ See Okamoto et al., Figs. 1A and 2A.

⁶ See Grylls et al., column 5, lines 12-15.

In view of the amendments and discussions presented above, the present application is believed to be in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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